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ABSTRACT

Recent studies have suggested that depressives process personal information in a biased and negative self-referential manner. Normative ratings on a variety of "depressed" and "nondepressed" adjectives were obtained to investigate the exact nature of information processing in depressives. Subjects rated adjectives on depressive content, imagery, social desirability, and emotionality. Two groups of words emerged from this study, differing significantly in depressive-content but equivalent in imagery word-frequency, and word-length values. Knowledge of these word attributes will permit their systematic inclusion in cognitive research paradigms for the study of information processing and self-referencing in depression. (Author/CS)

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Content, Imagery, Social Desirability, & Emotionality Ratings for Depressed & Nondepressed Personal Adjectives

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Contemporary research and theorizing in social cognition has been increasingly concerned with a cognitive approach to the self (Greenwald & Ronis, 1978). In this respect, several recent studies have offered impressive convergent evidence for the notion that the self is an important aspect of the human information processing system (Markus, 1977; Kuiper & Rogers, 1979). For example, Rogers, Kuiper, & Kirker (1977) have demonstrated enhanced recall for adjectives rated under a self-referent task, when compared to recall levels for semantic tasks. Similarily, other investigators have proposed that the self may play a critical role in the processing of personal or social information about others (Kuiper & Rogers, 1979; Lemon & Warren, 1974; Ross, 1977).

The foundations for this type of approach to the self can be traced to a cognitive tradition which views the self as a schema (Bartlett, 1932; Neisser, 1976) or prototype (Posner & Keele, 1968). In line with this tradition, the self is thought to "act as a background or setting aginst which incoming data are interpreted or coded" (Rogers et al., 1977, p.678). This process of self reference deeply involves the self-schema or prototype in the interpretation transformation, organization, and memory for personal information (Markus, 1977; Rogers et al., 1977).

While normal (nonpathological) samples have been extensively studied in the context of the self, the cognitive model of the self also has broad application to psychopathology. In general, a cognitive and interpersonal emphasis has been increasingly apparent in contemporary

theorizing and research in psychopathology (e.g. Bower, 1978; Davis, in press; Mahoney, 1977; Russell & Beekhuis, 1976). As well, attitudes toward the self have been accorded prominence in contributing to various disorders (Bandura, 1977).

Beck (1976) has described depression as a negative view of self. Thus, a poor self-concept may have critical implication for the way depressives process personal information. In this context, recent studies have generally suggested depressives process personal information in a biased and negative self-referential manner (e.g., Golin & Terrell, 1977; Hamman & Krantz, 1976; Kuiper, 1978; Lloyd & Lishman, 1975; Nelson & Craighead, 1977; Rizley, 1978).

Accordingly, we have undertaken a research program specifically designed to investigate the exact nature of personal information processing in depressives. The research strategy involves depressed and nondepressed subjects making self-referent personality judgments (Yes/No decisions) on various personal adjectives. (e.g., aggressive, shy, outgoing). Dependent measures include: (a) rating times to formulate these judgments (b) recall of adjectives, and (c) clustering on recall protocols.

While this methodology has been extensively utilized on nonpathological groups (e.g. Rogers et al, 1977; Kuiper & Rogers, 1979), caution must be exercised in its application to pathological samples (i.e., depressives). For instance, one area of concern is the pathological versus nonpathological nature of the target adjectives employed. In studying the self-schema of depressives, one might logically wish

to present both "depressed" and "normal" personal adjectives. However, this has not yet been done in contemporary research (see Davis, in press). Consequently, no normative data exist for these two major types of adjectives. Thus, the purpose of the present study was to obtain normative ratings on a variety of "depressed" and "nondepressed" adjectives. To this end, four categories of ratings were obtained: Content (depressed versus nondepressed), Imagery, Social Desirability, and Emotionality ratings. The ultimate goal of this research was to empirically derive a list of 30 "depressed" and 30 "nondepressed" adjectives that (1) differed significantly on content ratings, and (2) were equivalent on imagery (Paivio, 1971), word frequency (Kucera & Francis, 1967), and word length attributes.

Method

Overview

Several relevant sources in the existing personality and depression assessment literature (i.e. Beck, 1976; Jackson, 1967; Lubin, 1965) were scanned to provide the original sample of personal adjectives presumed to reflect either depressed or nondepressed content. These 121 adjectives were then rated by 72 subjects along 4 dimensions (content, imagery, social desirability, and emotionality). Finally, the obtained ratings were employed to construct a final list of 30 depressed and 30 nondepressed adjectives.

Subjects Seventy-two volunteers from a second year undergraduate psychology course at the University of Western Ontario completed the four ratings. There were approximately an equal number of males and

females. Each person completed only one type of rating. Thus, each type of rating was performed by a different group of 18 students.

Adjectives: A total of 121 adjectives were rated by each person under one of the four tasks. The adjectives presumed to be "non-depressive" were obtained from scale descriptions of Jackson's (1967) PRF (see Rogers, Kuiper & Kirker, 1977, p.680, for greater detail). They were chosen as representative of a broad range of "normal" characteristics. Moreover, they have empirical precedent in the work of Rogers and his colleagues (Rogers et al., 1977; Kuiper & Rogers, 1979). Adjectives presumed to be "depressed" were obtained from (a) Lubin's (1965) Depression Adjective Checklists (Forms A and B), and (b) Beck's (1976) descriptions of the depressed individual. Of the 121 words, 67 were of a "depressive" nature. Words were presented in different random sequences for rating.

Ratings: The ratings for all words were made on 7 point scales. (see Table 1) The content ratings required a judgment regarding whether a depressed person would rate the adjective as self-descriptive. The imagery instructions were to rate the ease with which each word aroused a mental image (c.f., Paivio, Yuille & Madigan, 1968). The third rating asked participants to judge the social desirability of each word (Jackson, 1967). The final rating sought a judgment regarding the degree of emotionality contained in the meaning of the word.

Procedure: In a group setting each student received a rating booklet containing the instructions plus the 121 words with rating scales. Booklets were distributed such that equal numbers performed each

rating. When the task was complete, students were debriefed and questions were answered.

Results and Discussion

In the selection of the final adjectives (30 depressed, 30 non-depressed), norms on the four ratings, plus word frequency (Kucera & Francis, 1967) and word length (number of letters per word) were considered. The adjectives were selected on the basis of their extremity on content ratings. There was no overlap for content ratings, with all nondepressed adjectives having a rating greater than 4.75 and all depressed words falling below 2.85. In addition, words were matched on Imagery ratings, with values for all adjectives ranging between 3.50 and 4.70. The final set of 60 adjectives, along with their various ratings, are presented in Table 1.

Insert Table 1 about here

Pearson correlations were then computed for all possible pairings of the 4 rating tasks, for the entire sample of 60 adjectives. As well, differences between the various ratings were evaluated via t-tests. Table 2 summarizes these results.

Insert Table 2 about here

In a further analysis the adjectives were separated into the depressed and nondepressed categories. The means, correlation coefficients, and t-tests derived from this separate classification

procedure are shown in Table 3. Finally, Table 4 presents comparisons

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Insert Table 3 about here

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based on word frequency and word length for the 30 depressed and 30 nondepressed adjectives.

Insert Table 4 about here

Overall, these results may be summarized as follows. Of the final 60 words, 30 were depressed, and 30 were nondepressed. On the basis of obtained ratings, these two categories were equivalent on (a) Imagery ratings (t = 1.54, ns),(b) word length (t = 0.43, ns), and (c) word frequency (t = 0.11, ns). The two categories were significantly different on (a) Content (t = -39.65, $p < .001$), (b) Social Desirability (t = -14.62, $p < .001$) and (c) Emotionality (t = 5.20, $p < .001$).

Correlations. Of the entire sample of 60 words (Table 2), Imagery ratings were not significantly correlated with any other variable. The remaining three ratings (i.e., Content, Social Desirability, Emotionality) were significantly correlated for all possible pairings. That is, significant correlations emerged between Content and Social Desirability (r = .91, $p < .001$), Content and Emotionality (r = -.56, $p < .001$), and Emotionality and Social Desirability (r = -.58, $p < .001$). These expected significant correlations reflect the pathological versus nonpathological distinction in the adjectives.

Correlations among the subsets of 30 depressed and 30 nondepressed

words (Table 3) revealed that for both subsets, Imagery ratings were not significantly correlated with Content, Emotionality or Social Desirability ratings. Of the depressed words, Content ratings were significantly correlated with Social Desirability (r = .53, p< .005) and Emotionality (r = -.58, p< .001); the remaining correlations failed to reach statistical significance. Within the nondepressed words, Content was correlated with Social Desirability (r = .36, p< .05).

In summary, two distinct groups of words emerged from this normative study; being clearly distinguished on the basis of depressive versus nondepressive content. In addition, the two sets of adjectives are equivalent on the basis of imagery values, word length and word frequency. Knowledge of these adjective attributes will permit their systematic inclusion in cognitive research paradigms designed to study self-reference and the processing of personal information in depression.

Table 1

Normative Ratings

a) Nondepressed words	CONTENT [a]	IMAGERY [b]	SOC.DESIR. [c]	EMOTIONALITY [d]	K-F FREQ.	PRF SCALE
achieving	6.26	4.88	3.61	1.88	15	Achievement
amiable	5.47	3.52	6.35	3.83	2	Affilitation
assertive	5.68	4.68	5.69	4.61	2	Dominance
capable	5.78	3.89	6.23	2.61	66	Achievement
consistent	4.83	3.42	4.93	2.22	28	Order
courteous	4.89	4.84	5.64	2.44	6	Social Recog.
curious	5.83	5.00	5.57	3.83	46	Understanding
durable	6.00	3.52	4.92	2.16	12	Endurance
free	5.83	5.05	5.92	5.10	260	Autonomy
forceful	5.36	5.26	4.00	4.47	8	Dominance
gracious	5.68	4.26	5.35	2.38	9	Soc.Recog.
hasty	4.78	3.78	3.00	3.05	5	Impulsivity
helpful	5.83	5.26	6.00	3.27	29	Nurturance
inquiring	5.47	4.36	5.85	2.83	5	Understanding
jovial	6.27	4.36	4.78	5.00	1	Play
loyal	5.26	4.15	6.28	3.72	18	Affiliation
maternal	5.00	5.26	4.14	4.33	6	Nurturance
neat	5.21	4.78	5.14	1.94	21	Order
neighbourly	5.50	4.36	5.46	3.44		Affiliation
orderly	4.89	4.68	4.69	2.55	20	Order
organized	5.89	5.15	5.42	2.50	56	Order
playful	6.05	4.95	5.16	4.16	3	Play
polite	4.78	4.52	6.00	2.61	7	Social Recog.
proper	5.78	4.00	4.42	1.72	95	Social Recog.
pushy	5.36	5.15	2.16	4.38		Aggression
rational	5.47	4.05	5.92	2.27	25	Understanding
rebellious	4.94	5.25	3.14	5.22	2	Aggression
sociable	5.94	5.16	5.86	3.52	1	Affiliation
sturdy	6.05	3.90	5.07	2.72	16	Endurance
tidy	5.21	5.10	4.78	2.05	1	Order

a 7-point scale with (1) "Extremely descriptive of a depressed person" and (7) "Extremely descriptive of a normal nondepressed person."

b 7-point scale with (1) "Extremely low imagery" and (7) "Extremely high imagery."

c 7-point scale with (1) "Extremely socially undesirable" and (7) "Extremely socially desirable."

d 7-point scale with (1) "Extremely low degree of emotionality" and (7) "Extremely high degree of emotionality."

Table 1 (Continued)

b) Depressed words	CONTENT	IMAGERY	SOC.DESIR.	EMOTIONALITY	K-F FREQ.	LUBIN
bleak	2.00	3.57	1.85	4.33	10	*
blue	1.89	4.94	2.00	4.50	143	
criticized	2.47	4.42	2.92	4.16	14	*
defeated	1.47	4.73	1.92	4.50	15	
dismal	1.68	4.38	1.42	4.55	8	
downcast	1.73	3.94	1.92	4.55	2	*
downhearted	1.94	4.38	2.30	4.73		*
dull	2.84	4.57	2.21	2.61	27	*
empty	1.73	4.57	1.57	4.22	64	
failure	1.52	4.68	1.57	5.11	89	*
forlorn	1.94	3.52	2.21	4.26	3	*
glum	1.68	4.15	1.78	4.00	1	*
guilty	2.15	4.57	2.28	5.11	29	
heartsick	1.91	3.68	2.35	6.16		*
helpless	1.89	4.57	1.76	4.83	21	
hopeless	1.78	4.68	1.64	5.11	14	*
inadequate	1.36	3.78	1.42	4.94	32	
inferior	2.00	4.78	1.85	4.66	7	
listless	2.36	4.42	2.21	3.55	1	*
loser	2.05	4.22	1.57	4.27	1	
lost	1.15	4.68	1.78	4.83	173	
melancholy	1.94	4.21	2.15	4.05	9	*
oppressed	2.47	4.16	2.00	5.25	5	*
solemn	2.00	3.94	2.63	3.62	12	
troubled	1.68	4.84	2.64	5.11	31	
unlucky	2.47	4.33	2.35	3.22	2	*
unwanted	1.57	4.05	1.71	5.16	6	*
weak	2.38	4.66	1.92	3.27	32	
weary	2.35	4.68	2.61	3.66	17	*
destroyed	1.73	3.83	1.14	5.47	39	*

Table 2

Means, Correlations, and *t* values on Ratings for the 60 words

	Content	Imagery	Social Desirability	Emotionality
	x = 3.73 SD = 1.85	x = 4.44 SD = 0.59	x = 3.57 SD = 1.78	x = 3.88 SD = 1.08
Content		r = .221 t = -3.06 *	r = .912 ** t = 1.63	r = -.56 ** t = -.45
Imagery			r = .150 t = 3.82 **	r = .060 t = 3.73 **
Social Desirability				r = -.582 ** t = -.95

Note: All comparisons at 59 df.

* $p < .05$

** $p < .001$

Table 3

Means, Correlations, and *t*-tests for 30 Depressed and 30 Nondepressed Adjectives

	CONTENT		IMAGERY	
	Depressed	Nondepressed	Depressed	Nondepressed
CONTENT	X = 1.95 SD = 0.39	X = 5.51 SD = 0.45	X = 4.33 SD = 0.40	X = 4.55 SD = 0.59
Depressed		r = .33 t = -39.65***	r = .07 t = -24.32***	
Nondepressed				r = .03 t = 7.15***
IMAGERY				
Depressed				r = -.24 t = -1.54
Nondepressed				
SOCIAL DESIRABILITY				
Depressed				
Nondepressed				
EMOTIONALITY				
Depressed				
Nondepressed				

* $p < .05$
** $p < .005$
*** $p < .001$

Table 3 (Continued)

Means, Correlations, and t-tests for 30 Depressed and 30 Nondepressed Adjectives

	SOCIAL DESIRABILITY		EMOTIONALITY	
	Depressed	Nondepressed	Depressed	Nondepressed
CONTENT	X = 1.99 SD = 0.42	X = 5.15 SD = 1.04	X = 4.48 SD = 0.76	X = 3.29 SD = 1.03
Depressed	r = .53** t = -0.59		r = -.58*** t = -13.39***	
Nondepressed		r = .36* t = 2.04*		r = .17 t = 11.61***
IMAGERY				
Depressed	r = .11 t = 23.68***		r = -.21 t = -.86	
Nondepressed		r = -.17 t = -2.55*		r = .24 t = 7.45***
SOCIAL DESIRABILITY				
Depressed		r = -.17 t = -14.62***	r = -.32 t = -13.99***	
Nondepressed				r = -.20 t = 6.36***
EMOTIONALITY				
Depressed				r = .31 t = 5.20***
Nondepressed				

* $p < .05$
** $p < .005$
*** $p < .001$

Table 4

Means, correlations, and t values for Frequency and Word Length Values of the Depressed and Nondepressed Words

		DEPRESSED WORDS	
		FREQUENCY[1] $x = 26.90$, $SD = 40.96$	WORD LENGTH[2] $x = 7.03$, $SD = 2.09$
NONDEPRESSED WORDS	Frequency $x = 25.50$ $SD = 49.52$	$r = -.142$, ns $t = 0.11$, ns	
	Word Length $x = 7.20$ $SD = 1.86$		$r = .42$, $p < .02$ $t = 0.43$, ns.

Note 1: Obtained from Kucera & Francis, 1967

Note 2: Based on number of letters per word.

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